# Book Reviews

***The Biology of Mental Health and Disease.*** The twenty-seventh annual conference of the Milbank Memorial Fund. New York: Hoeber-Harper, 1952. 654 pp. $10.00.

This book consists of 38 chapters with subdivisions ("discussions") in each in which anatomists, physiologists, biochemists, pharmacologists, geneticists, psychologists, and neuropsychiatrists report on their (mostly experimental) work on the problem of mental disease. There are great inequalities in the various contributions. Some authors discuss material largely or completely unpublished, others summarize results that were reported in a similar form many years ago. Some essays have an extensive bibliography, others have no references.

From the rich material presented, some topics and results may be mentioned in order to indicate the scope of this work. Anatomical studies by Conel and by P. Bailey indicate that cytoarchitectonic differences in the structure of the cerebral cortex have been overemphasized. Cortical function seems to be determined "by distribution of the fibers rather than by specificity of cells" (Conel). Cerebral circulation in its physiological and pathological aspects is discussed by Kety in an excellent essay, and Tschirgi deals with the blood-brain barrier and its physiological significance for homeostasis. He comes to the conclusion that the perivascular glia and not the vascular epithelium represents this barrier. Taylor describes his interesting studies on perfusion of the cat's brain and gives evidence for the fact that the utilization of glucose by the brain depends on a substance present in aqueous liver extracts. A series of papers is concerned with the biochemical aspects of brain activity. Among them, that by Elliott on "Brain Tissue Respiration and Glycolysis" deserves particular mention because of its clarity and completeness. Physiological contributions are made by Lloyd in an article dealing with the influence of volume conduction on electrical potentials, by Lilienthal and Marrazzi on neurohumors, by Jasper and Magoun on the integrative systems which originate in thalamus and lower parts of the brain stem and influence the activity of the cerebral cortex as a whole. Woolsey emphasizes the similarity in the anatomical organization of motor cortex and specific sensory projection areas.

Flexner's brief but highly interesting article cuts across the boundaries of anatomy, physiology, and biochemistry by the determination of morphological and chemical changes associated with the onset of cortical function in the fetal guinea pig. Experiments on the basal lamina of the cord of the chick show that differentiation of motor neurons depends on the peripheral structures which they innervate (Barron). Observations on monkeys with extensive cortical lesions lead Harlow to the conclusion that "although no specific intellectual function is localized in a single cortical area, the different cortical areas play markedly unequal roles in the mediation of our diverse intellectual processes."

Windle describes his well-known experiments on the effects of asphyxia at birth on learning ability, and McFarland discusses the influence of anoxia on sensory and mental processes. Quastel gives a comprehensive review on the relation between drug action and oxygen consumption of the brain, with emphasis on the mechanism underlying narcosis. This latter problem is also discussed by Larrabee on the basis of new ingenious experiments on the resting and activated superior cervical sympathetic ganglion. Ingalls emphasizes the importance of the prenatal environment for the causation of mongolism, and Hoagland, Altschule, and Gildea deal with the important problems of adrenocortical functions in psychoses. Enzymatic changes in the human cerebral cortex of psychotics are reported by Pope. Histopathological findings in functional psychoses are still largely negative, but new methods are being applied to these problems (Nurnberger). Factors leading to the production of psychoses (Hoch), therapeutic studies with vitamins and hormones, and analyses of shock- and $CO_2$-therapy are also presented. Keys discusses the relation of semistarvation to psychoneurosis, and Liddell and Gantt report new work on experimental neurosis.

This interesting book deserves wide reading.

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***A Textbook of Pharmacology: Principles and Application of Pharmacology to the Practice of Medicine.*** William T. Salter. Philadelphia–London: Saunders, 1952. 1240 pp. Illus. $15.00.

The introduction of so many new and effective therapeutic agents during the past decade has made the task of writing a textbook of pharmacology a formidable one. It has become particularly difficult to satisfy the experimental pharmacologist interested in the basic principles; the practitioner of medicine, desirous of a more empirical approach to the subject; and the medical student for whom such texts are primarily intended. The late Dr. Salter was a practicing clinician before entering pharmacology and would be expected to bring to the subject the desirable clinical background. This he has done, at the same time covering the subject matter included in textbooks of pharmacology.

The first three chapters of the book, entitled "General Principles of Pharmacology," consist of a historical résumé, a very brief outline of prescription writing, and the usual discussions of dosage and administration. The main body of the text, entitled "Drug Action on Physiological Mechanisms," follows the usual pattern of textbooks on pharmacology. This is followed by "The Application of Drugs in Clinical

Medicine," in which the drugs acting on the eye, neuromuscular system, alimentary tract, uterus, and skin are considered, followed by a section on "Toxic Substances of Industrial and Homely Origin," and one on "Chemotherapy." The last part consists of a chapter devoted to toxicology. This arrangement has resulted, unfortunately, in a rather disjointed presentation, without the logical sequence so desirable in a textbook.

The material presented is up to date and complete; the typography is excellent. The references appended to each chapter are also well chosen. The book is written in a colloquial style which, although making for a pleasant presentation, results in unnecessary verbosity and is ill-suited for a text. The indiscriminate use of trade names is undesirable and confusing.

The book contains some errors which, although perhaps minor, are regrettable in a textbook and will be misleading to the reader. For example, in Chapter 19, one finds the molecular weight of sodium chloride given as 36.5 (p. 342); the view that "the 'cured patient' who leaves the hospital after serious dehydration is often a reduced animal as regards his total body weight" (p. 246). Although it will be apparent to the initiated that, in the instances cited, the author meant the atomic weight of chlorine (which is actually 35.5), and that the patient was edematous (rather than dehydrated), these apparently minor errors may be a source of confusion to the potential reader.

A more serious criticism is the lack of selectivity in the material chosen for presentation. For example, on page 1195, a paragraph is devoted to the treatment of opium poisoning by permanganate, an antidote of questionable virtue, and other symptomatic measures, although the use of allyl-*nor* morphine, the specific remedy, is also mentioned with no indication that the use of this drug is by far the most effective antidote. Likewise, on page 1191, although the use of the artificial kidney is mentioned, there is no indication that repair of extracellular fluid volume promptly is of greatest importance and may prevent the onset of anuria, and that conservative measures usually suffice in the management of such patients.

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***Progress in Organic Chemistry,*** Vol. 1. J. W. Cook, Ed. New York: Academic Press; London: Butterworths, 1952. 287 pp. $7.80.

This volume represents the British counterpart of Zechmeister's *Progress in the Chemistry of Organic Natural Products.* For the American reader it has the advantage of being entirely in English, even though one of the contributors, H. H. Brockmann, is at Göttingen. This first volume will be followed, it is hoped, by others which will enable the specialist in the ever-widening field of organic chemistry to obtain a glimpse of what is happening outside the area of his own immediate interest.

The topics covered are of a diverse nature and include structures of certain alkaloids, and of substances isolated from the heartwoods of conifers, photodynamically active pigments—i.e., substances toxic to organisms in the presence but not in the absence of light—chemicals from petroleum, chemistry of acetylene derivatives, drugs inhibiting symptomatic stimulators, free radicals in organic reactions, and the hydrolysis of starch.

The material is well covered and clearly presented; any adverse criticisms occurring to this reviewer are limited to details. On page 95 the yield stated for the oxidation of butane and propane must, if true, be rapidly driving Celanese Corporation into bankruptcy. On page 197 the boiling point of propylene oxide is given as 84° C; it should be 35°. On page 130 it is stated that the sole product of the condensation of formaldehyde and nitromethane is trimethylolnitromethane; actually 2-nitroethanol is made by this reaction and is an important intermediate in the synthesis of higher carbohydrates from lower ones. On page 70 the statement is made that "neither analysis nor degradation experiments" can decide between two possible formulas for hypericin which are, respectively, $C_{30}H_{18}O_8$ and $C_{30}H_{16}O_8$. This is a difference of 12.3 per cent in hydrogen content and should be well within the capabilities of modern analysis.

This volume constitutes a valuable addition to the branch of organic chemistry literature which systematizes, organizes, and portrays to the busy chemist recent advances that he has not had time to assimilate from the original literature.

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# *Scientific Book Register*

***Problems of Life: An Evaluation of Modern Biological Thought.*** Trans. from *Das Biologische Weltbild.* Ludwig von Bertalanffy. New York: Wiley; London: Watts, 1952. 216 pp. $4.00.

***Physical Diagnosis.*** Harry Walker. St. Louis: Mosby, 1952. 461 pp. $8.00.

***Science and Humanism: Physics in Our Time.*** Erwin Schrödinger. New York: Cambridge Univ. Press, 1951. 68 pp. $1.75.

***Ancient Sparta: A Re-examination of the Evidence.*** Tout Memorial Publication Fund. K. M. T. Chrimes. New York: Philosophical Library, 1952. 527 pp. and plates. $8.75.

***The Structure of Society.*** Marion J. Levy, Jr. Princeton, N. J.: Princeton Univ. Press, 1952. 584 pp. $5.00.

***Culdoscopy: A New Technic in Gynecologic and Obstetric Diagnosis.*** Albert Decker. Philadelphia–London: Saunders, 1952. 148 pp. Illus. $3.50.

***The Development of Economic Thought: Great Economists in Perspective.*** Henry William Spiegel, Ed. New York: Wiley; London: Chapman & Hall, 1952. 811 pp. $6.50.